

97. In the Sholapur Division natural reproduction has advanced steadily, grass has increased in density, and self-sown seedlings of nimb and other trees which inhabit this comparatively rainless part of the Deccan, are coming up in fair profusion all over the forests, on uplands as well as on plains.

(2). *Artificial Reproduction.*

98. In the East Khándesh Division 35 khandis, 14 maunds and 11 seers of seeds collected mostly by forest guards, were sown over 4,550 acres of reserved forests; of which 1,133 acres were in prepared pits, in 573 acres the seeds were dibbled into the ground, 843 acres were ploughed up in the first place, and over the remaining 2,001 acres seeds were broad-casted. Mr. Madan reports that these operations have met with varying success according to soil and situation; in some places, bábul seedlings have appeared in dense masses; in other localities awla (*Phyllanthus emblica*) and tarwad (*Cassia auriculata*) cover the ground, but the germination of teak (*Tectona grandis*) has been generally sparse, as it usually takes more time than one rainy season to make its appearance; some slips of *Jatropha curcas* planted by forest guards have established themselves.

99. In the West Khándesh Division in the two nurseries, one in Dhulia and the other at Dahiwal in the Pimpalner Range, a large number of young plants are raised yearly for transplanting into the neighbouring forests, but the results are inconsiderable. The exploited coupes of the season were sown up. Each forest guard is required to prepare and sow 1,000 pits, and to broad-cast one thousand acres of the forests, within his beat yearly; and where constant attention is given to the young plants, and they are well protected against cattle and fire, a fair measure of success has been obtained.

100. In the Násik Division 616 acres were sown chiefly with bábul seeds in the reserved forests on the plains in the Násik Range. Some portions were pitted over, and others were ploughed. The coupes of the year in the Násik, Igatpuri, Sinnar and Nandgaon ranges have been sown up; in some of them the ground was previously ploughed, and in some the seeds were dibbled, while elsewhere they were broad-casted. Some of the old plantations are flourishing, such for example as Belgaum Dhaga and Pathardi in the Násik Range, Sawandgaon, Dabli, Aghar and Wadner in the Málegaon Range, Pada in the Dindori and Pimpalgaon Mori in the Igatpuri Range: but artificial cultivation generally is not so successful as might be the case if cattle were kept out constantly from the areas which have been specially treated in successive years.

101. In the Ahmednagar Division 191 acres 15 gunthas representing the exploited coupes of the year in the bábul reserved forests were ploughed and sown, principally with imported Sind bábul seed; and as reported by the Range Forest Officers, the results of these sowings are generally satisfactory; many of these forests being situated on the banks of large rivers. Nimb seeds were dibbled into the ground inside bushes over 9,375 acres at intervals of 10 feet in most of the ranges, and the Range Forest Officers report the results to be good: 919 acres were dibbled over with teak seeds at distances of 10 feet apart, in the Shrigonda, Karjat, Shevgaon and Sangamner ranges, but the seeds have not germinated so freely as hoped for. In lands opened to sheep grazing in the Nagar, Párner, Shrigonda, Karjat, Ráhuri and Sangamner ranges, 2,835 acres were dibbled over with tarwad (*Cassia auriculata*), and seeds of other kinds, the young growth from which sheep religiously avoid, at distances of 10 feet apart; and the results of this operation are said to be fairly successful. In the Nagar, Shrigonda, Karjat, Jámkhed, Shevgaon, Nevása, Ráhuri and Kopargaon ranges, 3,433 acres of rich black soil were broad-casted with bábul seed in the established manner, a large handful of seed being scattered at every 4 paces or 10 feet by a gang of labourers moving in a line 10 feet apart from each other; and the Range Forest Officers report that the seeds of the previous year have germinated very freely, while those of the year under report have only come up sparsely at present. 117,643 pits were dug by paid labour in the Nagar, Párner, Shrigonda, Karjat, Shevgaon, Nevása, Ráhuri, Kopargaon, Sangamner and Akola ranges, and nimb (*Melia azadirachta*), sadara (*Terminalia tomentosa*), teak (*Tectona grandis*), &c. were sown in them, and the condition of the seedlings

is good. In 40,159 acres of reserved forests beat guards with their own hands prepared and placed seeds in 120,677 small pits and also in 1,016,876 holes, each just large enough to bury a seed, and in addition to this 15,000 acres were broad-casted by them: 255 khandis of seeds were collected by forest guards within their beats, free of all cost.

The plantations at Dongargan and Hanumantgaon are maintained, and are making good progress; 2 mális on Rs. 6 each are employed to look after them.

102. In the Poona Division reboisement operations by means of dibbling, furrow-ploughing, &c., were undertaken with great vigour, paid labour costing Rs. 3,121 being employed. 135,480 pits were thus dug for the reception of seeds; 864½ acres of lands on the flat were ploughed and sown; and 400 acres were sown broadcast. In addition thereto, 133,950 pits covering an area of about 403 acres were made and sown by forest guards, free of cost, with mixed seeds, and 1,617 acres of land containing bushes were broad-casted in places, and seeds of nimb, mango (*Mangifera indica*), jambhul (*Eugenia jambolana*) and of other trees of the arid region, were dibbled into the ground. In every range of the Poona Division, seeds were collected by forest guards free of cost, and the quantities of seeds thus collected are returned at 152 khandis, 15 maunds and 27 pounds.

103. In the Sátára Collectorate operations are confined to,—

1. Nursery and plantation proper.
2. Dibbling, &c., of seed.
3. Broad-casting.

A larger amount has been expended than in the previous year, the chief reason for this being the sowing up of all the exploited coupes of the season, so that these compartments may become hereafter fully stocked with a large proportion of seedling trees. In all the ranges, plantation works were undertaken at the cost of the forest budget, which amounted to Rs. 1,941, and on the whole the year was a favourable one for the growth of vegetation, and it was pleasing to observe a marked improvement in many of the plantations.

104. In the Sholápur Division the measures taken in the matter of re-forestation, by paid labour, have been that the smaller kinds of seeds have been broad-casted; and the larger kinds, such as ain (*Terminalia tomentosa*), teak, mango, &c., have been dibbled into the soil over a surface of about 4,500 acres. Beat guards, each of them without any extraneous assistance, have prepared 100 pits for mangoes 2' x 2' x 2', and 2,000 pits 1' diameter and 1' deep for other seeds, within the forests in their beats; and the total extent of their cultural works has spread over 165 acres 38 gunthas sown by pitting, 61½ acres sown by dibbling, and nearly 14,857 acres sown broad-cast. Each guard is required to gather and bring in 784 lbs. of mixed seeds during the season; 112 khandis, 26 maunds and 10 seers of seeds were thus collected by forest guards; while 80 khandis, 5 maunds and 11 seers were purchased locally, and 5 khandis, 25 maunds and 5 seers were imported into the division. The Divisional Forest Officer reports the forest guards' cultural work to be promising.

105. The cultural operations undertaken by forest guards, as a part of their ordinary duties, cannot but have a marked effect upon the rewooding of the country within the Central Circle. Each forest beat, and all the forest areas in every division are divided into beats, so that not an acre in charge of the Forest Department is left outside a beat, is an unit of plantations; so that reboisement is pushed yearly in as many different localities spread over the face of the country, as there are forest guards in charge of forest-beats.

(3). *Early Thinnings.*

106. No such operation has been attempted in any division of the Circle.

(4) *Other Operations for the Improvement of the Growing Stock.*

107. All the forest guards cut creepers within the forests of their beats, and they are required to eradicate all prickly-pear which may freshly appear in their forests.

108. In the East Khándesh Division prickly-pear (*Opuntia dillenii*) was taken out of forests in the Bhusával and Jalgaon ranges at an expenditure of Rs. 8.